

WHAT IS CLAIMED IS

1. A navigation system comprising:
speech-recognition means for performing speech-recognition processing on input speech spoken by a speaker;
5 language-determining means for determining what language said input speech is spoken in based on the contents of said input speech as recognized by said speech-recognition means; and
navigation-processing means for performing a vehicle-installed-type navigation operation utilizing the language of a speaker as determined by said language-determining means.
- 10 2. The navigation system according to Claim 1, wherein:
said navigation-processing means includes map displaying means for displaying map information showing a vicinity of a vehicle; and
said map displaying means utilizes the language of a speaker, as determined by said language-determining means, for the language of characters included in said displayed map information.
- 15 3. The navigation system according to Claim 1, wherein:
said navigation-processing means includes route-searching means for searching for a route to a destination and route-guiding means for guiding a vehicle by means of guiding speech along a route set by said route-searching means; and
said route-guiding means generates said guiding speech utilizing the language of a speaker as corresponding to said language determined by said language-determining means.
- 20 4. The navigation system according to Claim 1, wherein said language-determining means examines the language every word in said input speech is spoken in and determines the language the majority of words are spoken in as a speaker's language.

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5. The navigation system according to Claim 4, wherein:
said language-determining means includes a database for
storing features of a speaker's language as extracted by the language-
determining means; and
the speaker's language is determined individually.

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10. The navigation system according to Claim 1, further comprising
image recognition means for determining the contents of the characters
included in an inputted image of a captured predetermined road guiding
board, wherein said navigation-processing means includes guiding means for
replacing the characters, whose contents are determined by said image
recognition means, with other characters, having the same meaning, in a
speaker's language as determined by said language-determining means, and
for performing at least one of displaying or speech-outputting.

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7. The navigation system according to Claim 1, further comprising:
transmission requesting means for requesting transmission of
detailed information in the language of a speaker as determined by said
language-determining means; and
information receiving means for receiving the transmitted
detailed information transmitted in accordance with the request from said
transmission requesting means.

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8. A navigation system comprising:
a microphone;
a speech-recognition device, for determining the language of a
spoken word, connected with the microphone;
an identity learning unit for computing a frequency of languages
determined by said speech-recognition device and for updating the contents
of an identity database based on a frequency distribution of the languages
stored in said identity database;

10 a disc reading device for reading map data from a storage medium;

15 a map reading control unit for specifying a speaker's language based on the determination result of said identity learning unit, and for sending said disc-reading device a request for map data corresponding to the specified language of a speaker; and

20 a display device for displaying a map image showing a vicinity of a vehicle.

25 9. A navigation system comprising:

- 10 a microphone;
- 15 a speech-recognition device, for determining the language of a spoken word, connected with the microphone;
- 20 an identity learning unit for computing a frequency of languages determined by said speech-recognition device and for updating the contents of an identity database based on a frequency distribution of the languages stored in said identity database;
- 25 an intersection guiding unit for specifying a speaker's language based on the determination result of said identity learning unit, for generating an intersection guiding image corresponding to the specified language, and for causing a speech data generating unit to generate guiding speech data corresponding to the specified language;
- 30 an audio unit for outputting the guiding speech data generated by said speech data generating unit; and
- 35 a display device for displaying the intersection guiding image generated by said intersection guiding unit.

40 10. A navigation system comprising:

- 45 a microphone;
- 50 a speech-recognition device, for determining the language of a spoken word, connected with the microphone;
- 55 an identity learning unit for computing a frequency of languages determined by said speech-recognition device and for updating the contents

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of an identity database based on a frequency distribution of the languages stored in said identity database;

a camera;

an image recognition unit for determining a language of a character string included in a road guiding board captured by said camera;

a guiding sign generating unit, for generating a guiding image in a speaker's language, connected with said image recognition device; and a display device for displaying said guiding image generated by said guiding sign generating unit.

11. The navigation system according to Claim 10, further comprising:

a speech data generating unit connected with said guiding sign generating unit; and

an audio unit for outputting guiding speech data generated by said speech data generating unit,

12. The navigation system according to Claim 10, wherein said guiding sign generating unit generates a guiding image by replacing character strings in a route guiding board with character strings of a different language.

13. A navigation system according to Claim 10, wherein said guiding sign generating unit generates the guiding image without replacing the language of the character strings contained in said road guiding board.

14. A navigation system comprising:

a microphone:

a speech-recognition device, for determining the language of a spoken word, connected with the microphone;

an identity learning unit for computing a frequency of languages determined by said speech-recognition device and for updating the contents of an identity database based on a frequency distribution of the languages stored in said identity database;

a disc-reading device for reading map data from a storage medium;

a map reading control unit for specifying a speaker's language based on the determination result of the identity learning unit, for determining whether map data corresponding to the specified language is not stored in the storage medium, and for sending said disc reading device a request for reading map data independent of the specified language; and

a map buffer for storing the read map data.

15. The navigation system according to Claim 13, further comprising an information processing unit for sending to an information center a request for transmitting the map data dependent on the language of a speaker, for receiving the map data, and for storing the map data in the map buffer.

16. A map information displaying method in a navigation system comprising the acts of:

performing speech-recognition processing on input speech; determining a language of a speaker of the input speech based on the contents of the recognized input speech; and displaying map information utilizing the language determined for the language of the characters.

17. The map information displaying method in a navigation system according to Claim 16, further comprising the act of determining whether map information corresponding to a speaker's determined language is stored in a storage medium.

18. The map information displaying method in a navigation system according to Claim 17, further comprising the act of reading map information independent of a speaker's language when the speaker's determined language is not stored in the storage medium.

19. A map information displaying method in a navigation system according to Claim 18.

wherein a request for transmitting map information dependent on a speaker's language is sent to an information center; and
the map information corresponding to this transmission request is received and stored in a map buffer.

5 20. A route guiding method in a navigation system comprising the acts of:

searching for a route to a destination;
performing speech-recognition processing on input speech;
determining a language of a speaker of the input speech based on the contents of the recognized input speech;
generating guiding speech corresponding to the speaker's determined language; and
guiding a vehicle along a route set in the searching step using the guiding speech.

10 15 21. A road guiding method in a navigation system comprising the acts of:

performing speech-recognition processing on input speech;
determining a language of a speaker of the input speech based on the contents of the recognized input speech;
20 inputting an image of a captured predetermined road guiding board;
determining the contents of characters contained in said image;
and
replacing the characters contained in the image, whose contents 25 have been determined, with other characters in a speaker's determined language having the same meaning.

22. The route guiding method in a navigation system according to Claim 21 further comprising the act of displaying the characters in the speaker's determined language.

23. The route guiding method in a navigation system according to
Claim 21 further comprising the act of audibly outputting the characters in the
speaker's determined language.

24. A road guiding method in a navigation system comprising the
acts of:

5 performing speech-recognition processing on input speech;
determining a language of a speaker of the input speech based
on the contents of the recognized input speech;

10 inputting an image of a captured predetermined road guiding
board;

determining the contents of characters contained in said image;
and

15 outputting the characters contained in said image when the
language of the characters contained in said image match the speaker's
determined language.

25. The road guiding method in a navigation system of claim 21
wherein the act of outputting the characters contained in said image is
performed audibly.

20 26. The road guiding method in a navigation system of claim 21
wherein the act of outputting the characters comprises the act of displaying
the characters.

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